

CLAIMS

1. A flame retardant polyester based artificial hair, formed from a composition having intrinsic viscosity of 0.5 to 1.4 which is obtained by melt kneading 100 parts by weight of (A) a polyester made of one or more of polyalkylene terephthalate or a copolymer polyester comprising polyalkylene terephthalate as a main component, 5 to 30 parts by weight of (B) a phosphorus containing flame retardant and/or a bromine containing flame retardant and 0.05 to 10 parts by weight of (C) at least one compound selected from the group consisting of a carbodiimide compound, a bisoxazoline compound and an isocyanate compound.
2. The flame retardant polyester based artificial hair according to claim 1, wherein the polyalkylene terephthalate is at least one polymer selected from the group consisting of polyethylene terephthalate, polypropylene terephthalate and polybutylene terephthalate.
3. The flame retardant polyester based artificial hair according to claim 1, wherein the polyester (A) is polyethylene terephthalate reused by recycling from disposed PET bottles.
4. The flame retardant polyester based artificial hair according to claim 1, 2 or 3, wherein the phosphorus containing flame retardant and/or a bromine containing flame retardant (B) is at least one compound selected from the group consisting of a phosphate compound, a phosphonate compound, a phosphinate

comound, a phosphine oxide compound, a phosphonite compound, a phosphinite compound, a phosphine compound, and a condensed phosphate compound.

5. The flame retardant polyester based artificial hair according to claim 1, 2 or 3, wherein the phosphorus containing flame retardant and/or a bromine 5 containing flame retardant (B) is at least one compound selected from the group consisting of a bromine-containing phosphate ester flame retardant, a brominated polystyrene flame retardant, a brominated benzyl acrylate flame retardant, a brominated epoxy flame retardant, a brominated phenoxy flame retardant, a brominated polycarbonate flame retardant, a derivative of tetrabromobisphenol-A, 10 a bromine-containing triazine compound and a bromine-containing isocyanuric acid compound

6. The flame retardant polyester based artificial hair according to claim 1, 4 or 5, wherein the at least one compound selected from the group consisting of a carbodiimide compound, a bisoxazoline compound and an isocyanate compound 15 (C) is at least one compound selected from the group consisting of p-phenylene-bis-o-tolylcarbodiimide, p-phenylene-bis-p-chlorophenyl carbodiimide, ethylene-bis-diphenyl carbodiimide, poly(4,4'-methylene-bis-cyclohexyl carbodiimide), poly(4,4'-diphenylmethane carbodiimide), poly(3,3'-dimethyl-4,4'-diphenylmethane carbodiimide), poly(naphtylene carbodiimide), poly(p-phenylene carbodiimide), poly(m-phenylene carbodiimide), poly(tolylcarbodiimide), 20 poly(diisopropylphenylene carbodiimide), poly(methyl-diisopropylphenylene carbodiimide), poly(triethylphenylene carbodiimide) and poly(triisopropylphenylene carbodiimide).

7. The flame retardant polyester based artificial hair according to claim 1, 4 or 5, wherein the at least one compound selected from the group consisting of a carbodiimide compound, a bisoxazoline compound and an isocyanate compound (C) is at least one compound selected from the group consisting of 2,2'-bis(2-oxazoline), 2,2'-bis(4-methyl-2-oxazoline), 2,2'-bis(4, 4-dimethyl-2-oxazoline), 2,2'-bis(4-phenyl-2-oxazoline), 2,2'-bis(4-cyclohexyl-2-oxazoline), 2,2'-bis(4-benzyl-2-oxazoline), 2,2'-p-phenylene-bis(2-oxazoline), 2,2'-m-phenylene-bis(2-oxazoline), 2,2'-o-phenylene-bis(2-oxazoline), 2,2'-p-phenylene-bis(4-methyl-2-oxazoline), 2,2'-p-phenylene-bis(4,4-dimethyl-2-oxazoline), 2,2'-m-phenylene-bis(4-methyl-2-oxazoline), 2,2'-m-phenylene-bis(4,4-dimethyl-2-oxazoline), 2,2'-ethylene-bis(2-oxazoline), 2,2'-tetramethylene-bis(2-oxazoline), 2,2'-tetramethylene-bis(4,4-dimethyl-2-oxazoline), 2,2'-9,9'-diphenoxylethane-bis(2-oxazoline), 2,2'-cyclohexylene-bis(2-oxazoline) and 2,2'-diphenylene-bis(2-oxazoline).

15 8. The flame retardant polyester based artificial hair according to claim 1, 4 or 5, wherein the at least one compound selected from the group consisting of a carbodiimide compound, a bisoxazoline compound and an isocyanate compound (C) is at least one compound selected from the group consisting of 1,6-hexamethylene diisocyanate, 1,12-dodecamethylene diisocyanate, 2,2,4-trimethylhexamethylene diisocyanate, 2,4,4-trimethylhexamethylene diisocyanate, isophorone diisocyanate, 1,4-cyclohexane diisocyanate, 4,4'-dicyclohexylmethane diisocyanate, hydrogenated xylylene diisocyanate, p-phenylene diisocyanate, tolylene diisocyanate, xylylene diisocyanate, 4,4'-diphenyl diisocyanate, 1,5-

naphthalene diisocyanate, 4,4'-diphenylmethane diisocyanate (MDI), triphenylmethane triisocyanate and 4,4'-diphenylether diisocyanate.

9. The flame retardant polyester based artificial hair according to any of claims 1 to 8, which is in the form of a non-crimped fiber.
- 5 10. The flame retardant polyester based artificial hair according to any of claims 1 to 9, which is spun dyed.
11. The flame retardant polyester based artificial hair according to any of claims 1 to 10, which has a monofilament size of 10 to 100 dtex.